
THE KYRGYZ SHEEP HERDERS AT A CROSSROADS

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ABSTRACT

This paper briefly narrates the historical and present challenges facing sheep herders in the Kyrgyz Republic. Originally these were nomads employing an horizontal and vertical migration system, but Russian conquest and settlement forced this to change to a system of transhumance. The latter, albeit structured in a collective system, was more or less maintained throughout the communist period. Other major changes during this period included the shift from fat tail meat sheep to fine wool sheep and the increasing dependence on imported feed.

Independence since 1991 has caused drastic changes in resource ownership, organisation and feed supply. These changes have led to a fragmentation of sheep ownership and a 50% decline in sheep numbers. Although land reform in the Kyrgyz Republic is ongoing, the situation regarding rangeland is still rather confused. Many of the high mountain pastures are State owned, but logistical problems, together with the contraction of the national flock, have caused them to become decreasingly well used. This has led to the over-utilisation of lowland pastures, which has been aggravated by shortages in feed supplements (imports of which were halted after the break-up of the Soviet Union). Producer prices are low, and can be linked to the remote location of producers, a lack of local purchasing power and the low quality of wool produced. It is not yet clear whether the sheep production system will continue to produce fine wool in the future, or whether it will revert to the meat/coarse wool production system seen commonly throughout the Near East.

INTRODUCTION

The break-up of the former Soviet Union has created opportunities as well as constraints for newly independent states. Kyrgyzstan was subjugated by the Russian empire in the second half of the last century. In part because of its isolated location, it has mainly focused on, and received support from Russia for more than a century. With declining support from Russia it is now adjusting to new economic conditions, and suffering.

⁽¹⁾ The views expressed in this paper are those of the author and not necessarily those of the World Bank or its affiliates.

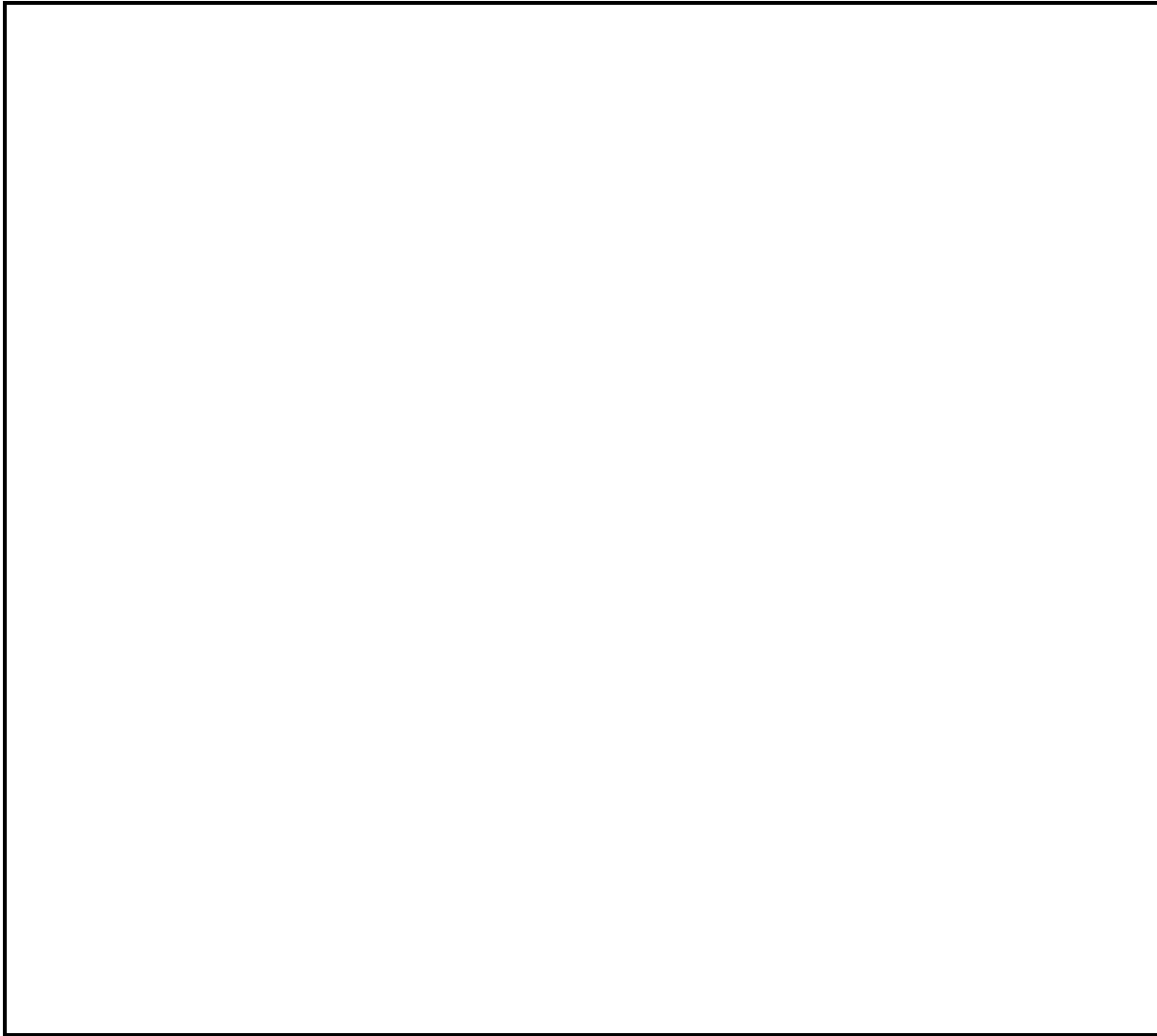


Figure 1 The Kyrgyz Republic

After mining, sheep and wool production are the most important activities in the Kyrgyz economy. The production system which was formerly extensive and organised in and around collective farms, is slowly trying to find new ways and new markets. As farms are supposed to be fully privatised by 1995, such changes are inevitable – but the direction they will take remains unclear.

HISTORY AND LEGACIES

Until the mid 19th century Central Asia remained virtually unchanged as a land of pastoral nomads migrating vertically and horizontally over vast stretches. Outstanding among the many tribes of the region were the Kazaks and Kalmucks, who occupied the dry plains, and the Kyrgyz who lived in the foothills and mountains of the Tian Shan and the Pamir. The latter employed a farming system

centred around horses and sheep. They also utilised a vertical migration transhumance with high mountain grazing in the summer and settling in the valleys and lowlands during winter. A minority of the Kyrgyz, mainly yak herders, stayed in the high altitude region all year.

Russian colonization during the late 19th century changed this transhumance system substantially. Many traditional grazing lands, especially the lowland valleys, were settled by Russian farmers who converted the land to crop production (cereals, cotton, tobacco and fruit) and settled livestock production. Sheep farming continued to dominate in the highlands, but became more intensive after the mid 1930s with the Russian drive to introduce Merino sheep for fine wool production.

Land and climate

The mountains areas of the Kyrgyz republic are covered with scattered forests (mainly fir and larch) between 1 200 and 3 000 m, and with thick seasonal grasses above 3 000 m. Most of the country is above 1 500 m. Arable agriculture is usually carried out in major lowland valleys such as the Chui and Fergana valleys, but also in upper parts of the Talas, Kochkorka, Naryn, Djugal, Arpa and Catyr Kul valleys of the lower Tian Shan foothills (nearly all under irrigation). Major crops in the lowlands are cereals, cotton, tobacco, fruits and vegetables; in the highlands mainly grain, lucerne and fruits.

The Central Asian Republics are cut off from the southern monsoons by the Himalayan and associated mountain ranges, and from major Mediterranean and Atlantic rains by the mountain ranges in Europe and the Caucasus (see Figure 1). Consequently the climate is continental and extreme, with cold winters and hot dry summers (although these are relatively cool on the mountain ranges and plateaux). In the lowlands weather conditions are dry (Table 1) but fairly mild, with a 5–7 month growing season. Mean temperatures in the lowlands (Bishkek) vary between –4 and –6°C in January and between 16 and 24°C in July. In the highlands (Naryn) these temperatures are respectively –14 to –20 and 8 to 12°C. Climatic conditions are thus rather harsh at higher elevations. In the Kochkorka and Naryn valleys, for example, only two cuttings of lucerne are obtained per summer season. Nearly all of this is used as hay.

Human organisation

Historically the Kyrgyz were nomads, using a system of year-round grazing. Late frosts or ice storms could cause massive mortality among stock. The Kyrgyz were organised in nuclear families and kin groups (*bir atany baldary* or *ails*) which shared common winter camps (Abramzon 1952). Summer pastures were often considered common property of larger groups, and grazing rights were not strictly defined.

Table 1 Climatic conditions

City	Altitude	Rainfall (mm)
Bishkek	828	422 (23%)*
Balykchy	1 938	127 (35%)
Kochkorka	1 952	212 (23%)
Naryn	2 100	304 (25%)
Sari Tash	3 100	368 (22%)
Osh	1 100	353 (26%)

* = *interannual coefficient of variation 1891–1980*

Source: Kyrgyz Hydrology Department

Kin groups consisted of a loose arrangement of 2–8, often patrilinear related families. The latter were organised in loose tribal groups. Chieftainship (*manaps*) of the tribe was hereditary (originally elected) – although the *de facto* control over the tribe varied (Petrov 1961). Chiefs were assisted by law administrators (*bii*) and military leaders (*batyr*). Land ownership was unknown, but the accumulation of livestock, mainly horses (of which the milk was used in summer to make *kumiss*), was positively perceived. Whereas the men were pre-occupied with herding, hunting and warfare, women were, apart from daily chores and dairying, making felt and felt carpets.

Grazing rights were based on kinship, although others within the same tribe could be allowed to use pasture, especially in the mountains where the ‘first come-first serve’ principle sometimes applied⁽²⁾. Russian colonisation changed this, but the effects were mainly felt in the lowlands where competition for land ownership developed after the settlement of Russians in the area (Olcott 1981). Russian occupation of the best grazing lands inhibited nomadism and led to increasing settlement and transhumance.

CHANGING PATTERNS IN THE 20 TH CENTURY

⁽²⁾ In part because of the abundance of mountain pasture: the factor limiting herd size was the lack of winter fodder.

Transhumance

The base camps or fixed settlements of most herders are located in the narrow valleys in the low mountains (1 000–2 000 m). During the spring and autumn seasons animals are generally kept near the sheepfolds in the middle or lower elevation areas (Figure 2). They are grazed during the day but are brought home at night, as predators are fairly common in the highlands.

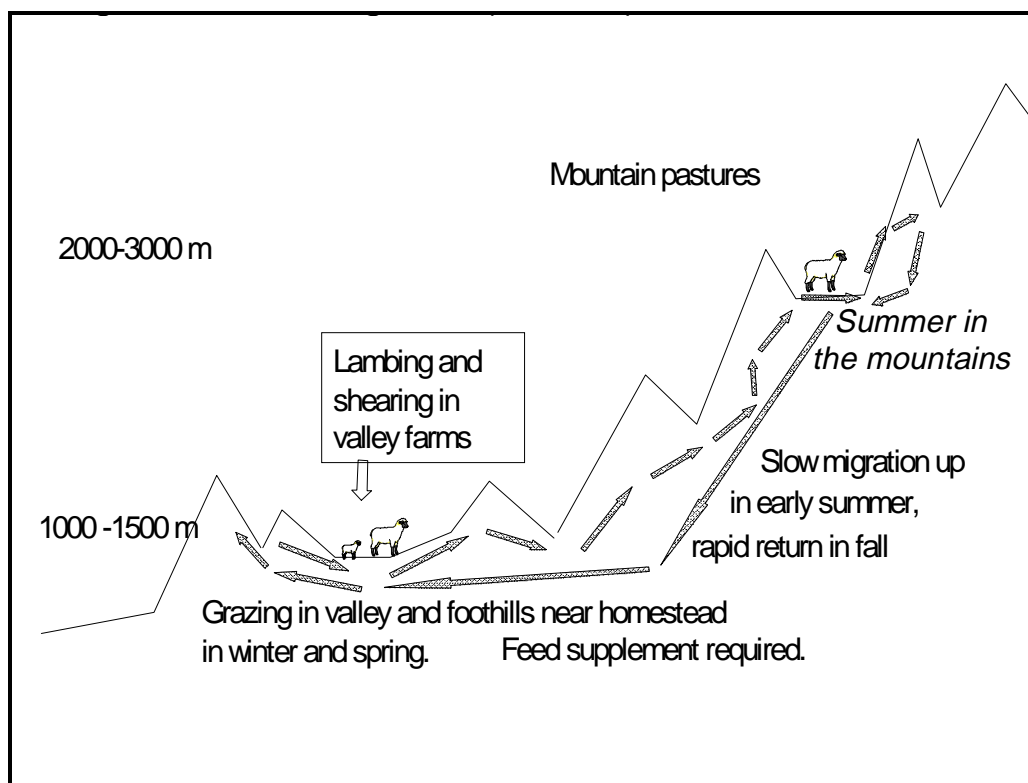


Figure 2 Example of common migration/grazing pattern of sheep.

Transhumance consists of:

- 1 A settled period in winter camps, when animals graze (grasses and shrubs) along the river valleys below the forest zone, and are fed supplementary feed in sheepfolds (November – mid April).
- 2 Spring migration to the summer pasture (*jailoo*) above the tree zone.
- 3 A short stationary period in the early summer pasture (June – mid July).
- 4 Migration in the summer (highland) pasture during July and August.
- 5 Slow migration over improved fall pasture until mid October.

6 Rapid migration back to winter camps.

This system was modified during the Soviet period, with the creation of collective farming. Larger flocks in the collective farms in the northern areas (Chui valley with flocks up to 25 000 sheep) migrated (often by train) into Kazakhstan for winter grazing (Figure 3). This, together with the importation of feed grain, allowed flock sizes to increase. The availability of cheap road transport also facilitated movements of flocks.

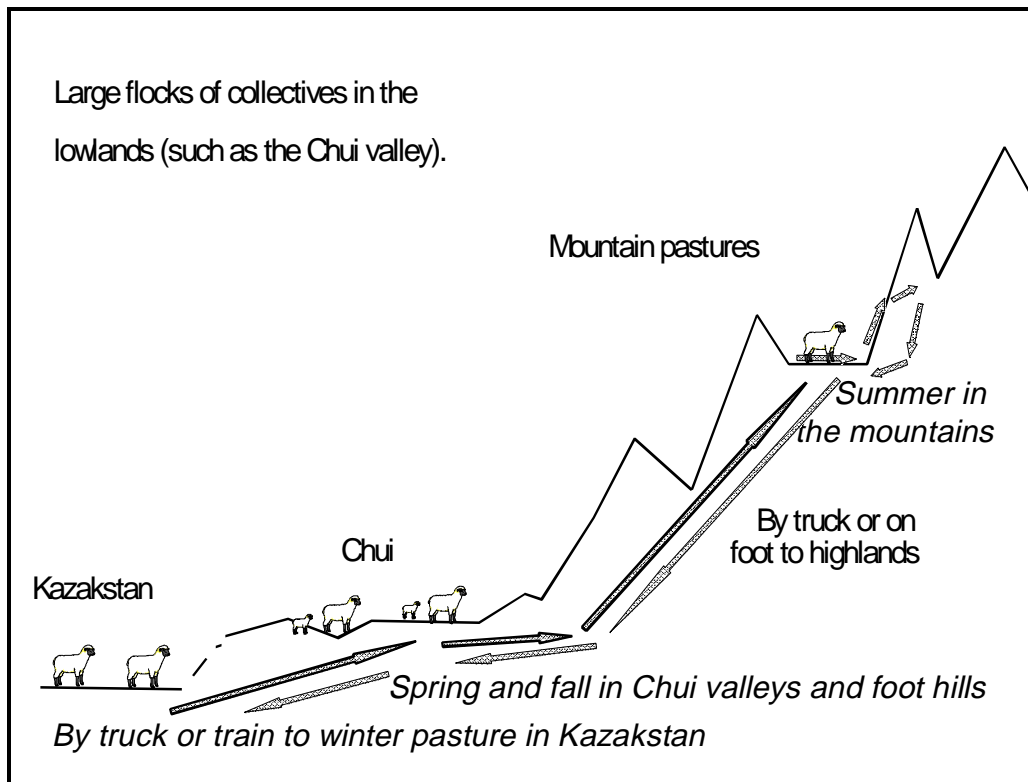


Figure 3 Example of (previous) migration pattern of sheep in collective farms in the Chui valley.

Collectivization was forcefully introduced in the early 1930s (the first collective sheep farm was organised in 1927), with considerable difficulty and major contraction of the herds and blocks. Within the collective system, however, transhumance continued. The nature of the extensive production system led to a somewhat decentralised collective with transhumance during summer and a scattering of sheepfolds in the valleys. It was estimated that nearly 75 % of herders operated a transhumant system.

Land and grazing allocations were managed by local (Soviet) councils, and based on demand, on relationships, as well as on pasture quality. The latter was

determined by surveys by the State Land Management Committee. Grazing was not hampered by national boundaries, and Kyrgyz sheep (especially from the Chui valley) spent their winter in Kazakhstan, whereas Kazak and Uzbek flocks used Kyrgyz summer pasture (mainly in eastern Kyrgyzstan). Small livestock owners trusted their animals to communal flocks, which grazed farm fields in winter and, guided by hired herders, migrated to high mountain pastures in summer.

Livestock and wool

Sheep, cattle and horses were and are the dominant livestock in the Kyrgyz Republic. Horses provide milk in summer (fermented to *kumiss*) and are increasingly used for traction. Sheep and cattle numbers declined drastically between 1989 and 1995, with populations falling from 10.6 to 5.1 million and from 1.2 to 0.9 million respectively. Cattle (mainly local *Ala-Tau* or crossbreds with Swiss Brown or Friesians) are kept mainly in the lowlands and are milked. In the highlands yaks are also used for milk and transportation. Sheep are rarely milked and are mainly kept for wool and meat.

Modern sheep/wool production began after forced collectivization in the early 1930s, when sheep numbers dropped to less than a million. The Russians introduced wool sheep and created the Kyrgyz Finewool (Merino), thereby replacing traditional breeds such as the *Tien Shan* and *Alai fat tail*. This genetic shift was accelerated by centralised management and the widespread use of artificial insemination. The sheep population slowly rose to 3 million by 1940 and had reached 8–10 million in the late 1980s (Table 2). The percentage of fine wool increased from 73 % of all wool produced in 1981 to 95 % in 1990. At present, about 5 % of this wool is used for felt making (often as a cottage industry). The rest is used in local wool industries or is exported. Apart from sheep, a limited number of cashmere goats are also kept in the highlands.⁽³⁾

Feed and fodder

The earlier expansion of the national herd increased demand for fodder. Whereas traditionally the risky period in animal production occurred during winter and spring (because shortages of stored feed), increases in animal numbers also stressed the summer grazing, resulting in pasture deterioration (Rozanove 1990). Dry matter yields at 2 700 m varied between 0.39 and 0.68 tons ha⁻¹ (Zotov and Adenov 1991). Efforts to improve highland pastures (Kashkarov and Balyan 1989), stipulated in a

⁽³⁾ Details about Kyrgyz sheep production can be found in the Kyrgyz sheep handbook 'The Improvement of Breeds of Sheep and Goats in Kirghizia' (in Russian) 1987, 128 pp.

pasture improvement law of 1987, were overtaken by socio-economic changes around 1990 and the subsequent drastic decline in sheep numbers. Still, feed supply continued to lag behind and, on average, was approximately 80% of requirement during 1991–1993 (World Bank 1994), and overgrazing was considered a major problem.

Table 2 Changes in sheep inventory

Sector	Number of sheep		
	Jan 1990	Oct 1994	Jan 1994
Social	7 708	2 490	1 558
Private	0	1 002	691
Plotters	2 269	3 153	2 821
Total	9 978	6 645	5 071

Source: Gosomstat/Ministry of Agriculture

PRESENT CHANGES

Legal reform and privatisation

Independence in 1991 did not initially lead to significant changes in the Kyrgyz sheep industry. A number of laws, on Land Reform (1991), and Peasant Economy (1991) were passed (Duncan 1994) which created an initial 13 000 small-holders, and increased herder independence (the estimated number of ‘herders’ during the mid 1980s was 60 000). The Pasture Lease Law of 1991 provided for short term (up to five years) and long term (maximum 25 years) lease of mountainous grazing land to be managed by municipal councils or local *raion* governments. It also regulated the use and maintenance of stock routes. Grazing fees and land use taxes were to be determined by the government’s Land Management Service and Land Reform Committees. However, these somewhat confusing arrangements have not been consistently implemented.

The new constitution (1993) introduced the principle that all land is the property of the State – but that the State could grant rights of possession in the form of 49 year leases. Land taxes/fees are collected by the *raion* government which can keep 50% ‘for the exclusive right of development.’ The rest is passed on to *oblast* and central authorities. In 1994 the listed fees in by the Naryn oblast administration

varied from 7–12 som ha⁻¹ for rainfed arable land, 25–28 som ha⁻¹ for irrigated land, 3–5 som ha⁻¹ for hayfields and 0.8–1 som ha⁻¹ for grazing land.⁽⁴⁾ The latter fee structure greatly increased the risk of overgrazing. A better method would have been a fee per animal/day. Other laws and decrees introduced in 1991 and 1994 also state the principle of grazing fees.

Responsibility for land management has been given to the Pasture Inspection Service of the parastatal Institute of Pasture and Forages. The latter was part of the Ministry of Agriculture but its present status is undetermined as it is in a process of complete or partial privatisation. Moreover, its authority is challenged by the State Committee for Environmental Protection which is responsible for forests, water and wildlife. In addition, 25 % of land is reserved in a 'Land Fund' to be given out to ethnic Kyrgyz.

Privatisation of herds and flocks has continued to progress. The share in sheep ownership of respectively state/collective farms, private farms and household plotters changed from respectively 77 %, 0 % and 22 % in 1991, to 40 %, 16 % and 43 % in mid 1994. This change will accelerate as all collective farms are to become privatised by mid 1995. This acceleration is likely to lead to further fragmentation of sheep ownership and, unless fodder production will be maintained, to further declines in livestock numbers.

Land reform has also been accelerating over the past year, but the lack of transparency of ownership is has led to some confusion. Maximum individual land ownership (49 year lease) is set at 20 ha for the better lowlands, 25 ha for arable farming in the highlands and 70 ha for mountainous pasture land. Provision of water and associated equipment (nearly all arable land is irrigated) is to be turned over *raion* governments. Privatisation of all collectives is expected to be completed in 1995; privatisation of state farms by late 1995. Some herder families expect to obtain a valley farm as well as the associated high mountain pasture. Existing valley farms (formerly as part of collective) in the low mountain areas (1 000–2000 m) are generally located in the foothills along the valley, and consist of a farmhouse and sheep shed used for winter housing. Each farm has access to approximately 40 ha of floodplain land, of which some may be used for arable farming, the rest is pasture. The (irrigated) farms in the lowlands are larger and more difficult to split. However, it seems likely that most will become fragmented, as the average right to land per person or family is close to 2 ha (the per capita available arable land is around 0.3 ha).

Much of the implementation of the land reform has been left to 'Rural Committees on Land/Agrarian Reform' and to the heads of the *raions* and oblasts

(4) 1 som = 1 US\$.

(*akims*)⁽⁵⁾. This may lead to conflict of interest and collusion between local government and leaders of transformed collective and state farms at the herders' expense.

The major problem in the agricultural sector is the lack of liquidity, in part related to the slow development of a private marketing sector. In the last two years nearly all trade has been carried out by barter – often to the detriment of the primary producer. New owners, often without a job or without major means of production (and consequently fodder), have been inclined to sell off a major part of the newly acquired sheep.

Feed and fodder

Feed imports, which previously amounted to about 1 million tons of feed grain a year, were halted in 1992–93. This initially affected poultry and pig production, with associated declines in inventory of respectively 75% and 60% ⁽⁶⁾. However, the decline in the supply of fuel, water and other inputs has also started to affect ruminant production through the production of quality winter feed. Meat production is temporarily showing a slight increase due to inventory reduction, but milk and wool production are declining. Privatisation is fragmenting the ownership of land as well as livestock. It still has to be questioned how much feed the country can produce and, consequently, the size of a national herd that can be supported.

Approximately 9.2 million ha of Kyrgyz land is classified as grazing land. In 1994 the high mountain pastures were under-utilised and continued their recuperation after the overstocking of the late 1980s. However, the grazing pressure on valley pastures and adjacent foothills has considerably increased and is a cause of major deterioration. Lowland pastures were always used for cattle and for small holders' sheep and goats; and many newly created owners are not yet organised to fully utilising rational grazing systems including high mountain grazing. The lack of fuel is also affecting the grazing system, as the trucking of animals to high mountain pasture has now stopped. Fuel shortages have forced many mountain herders to graze their animals at lower elevations. Although ultimately, other modes of sheep movement (such as on foot) and supply can be utilised, organisation requires some time and was not fully in place during the first two years after privatisation.

⁽⁵⁾ Officially pasture allocation made by the Rural Land Committees has to be certified by (i) the rural council of people's deputies CPD, (ii) the *raion* CPD, (iii) the oblast CPD and if, conflicts arise, by the Cabinet of Ministers.

⁽⁶⁾ The decline in pig production is also associated with the out-migration of the majority of ethnic Germans.

Apart from the rangeland use issue, the break-up of traditional rotational grazing patterns and the concentration of animals in the middle highlands, may lead to further deterioration in production quality. Among the reasons for this are:

- Mineral deficiency (iodine, copper, selenium and fluor deficiency were observed during our mission) in many of the valleys. Previously these were masked by (a) imported feed and fodder, (b) the provision of supplements, and (c) by transhumance in the mountains which provided much more varied diet.
- The higher risk of parasitic diseases (intestinal nematodes, liver flukes and various ectoparasites) mainly related to a lack of migration, and crowding in sheep folds.
- The breakdown of vaccination programmes and other centrally organised disease prevention schemes, leading to increased prevalence of infectious diseases. Important from a public health viewpoint are brucellosis and echinococcosis.

Prevention of such diseases could be assisted by provision of mineral supplements and overall improvements to the quality of feeding. However, most veterinary officials appear to be concerned more with treatment than with prevention.

Marketing

The second most important constraint in the livestock sector, after feed supply, is the absence of flexible marketing systems. The role of the state sector, although declining, still dominates the procurement of agricultural products, in part because of a lack of small local processors and traders. Most of the large scale parastatal processors of wool are not very competitive in purchasing wool (in 1994 the main mode of trade was barter), allowing the local and Chinese traders to purchase at low cash prices. Moreover, the quality of the wool, albeit 'fine', is low because of poor shearing, sorting and handling techniques.

Major needs include a more varied product mix (meat and meat products, durable dairy products, felt, wool and woollen products, skins *etc.*), considerable attention to quality improvement, wider market outlook and access (for example Siberia, China, Iran, Turkey are potential additional markets), a higher quality product, and smaller more flexible processors and traders.

CHALLENGES AHEAD

The coming years will, to a large extent, determine the scope and form of the future sheep industry in Kyrgyzstan. Possible scenarios vary. In the best case herders will continue to produce fine wool, and to improve quality through better feeding, shearing, sorting, testing and marketing. This would require the continuation of present breeding programmes and maintenance of the fodder production base. A less attractive scenario would see short to medium term decline in the production system with further fragmentation, lack of feed, declines in the breeding and production discipline and a shift towards producing meat and lower quality wool. Essential determinants of these scenarios are:

- The attractiveness of sheep production versus other types of (arable) land use, especially in view of the importance of feed/fodder production (the production of winter feed, prevention of severe overgrazing in the winter pasture).
- The role of farmer/herder organisations in the use of grazing lands, as well as in the management of herds and flocks.
- The overall local pricing of wool, meat and skins and price incentives for quality wool.
- Maintaining and improving the nutrition and health, especially mineral deficiency, parasites and a number of zoonotic diseases.
- A macro-economic environment which fosters competitive agricultural production.

Early signs indicate that intensive sheep farming in the lowlands is declining as irrigated farm owners concentrate on crop production or more intensive livestock production (*e.g.* dairy farming). Mountain farmers, however, appear to have few alternatives. Little attention is paid to land use issues, both from the point of view of equity as well as of environmental stability. The importance of the latter was underlined in mid 1995 when heavy rainfall caused major landslides and soil erosion in western Kyrgyzstan.

The main challenge for the generally poor mountain herders/farmers is the development of a sustainable land use/grazing system. Superficially this does not appear to be a major issue, as many herders seem to revert back to the traditional extended family (*atar*) and clan systems using traditional grazing practices. The question, however, is whether such systems can be absorbed by those involved in setting the rules for land use and land privatisation.

International aid

The Kyrgyz Republic with its low GNP and fairly democratic government is popular among international aid agencies. The government considers the sheep industry as a high priority and there are now a number of donors actively supporting aspects of sheep production and marketing, including EU-TACIS (Improvement of the Private Livestock Sector Project and Extension Project), the Swiss NGO Helvetas (creation of farmers' and womens' organisations). Others contemplating doing so include the World Bank (Kyrgyz Sheep Improvement Project) and IFAD (Agriculture Extension).

Outlook

For the first time in recent history the future of the sector may be in the hands of farmer/herders themselves, and it will be interesting to see how the production system evolves under these conditions. Although there are many constraints, the government's attempts to promote decentralisation (*e.g.* through the Tax Collection in the Land Law of 1993) together with the fact that it is committed to privatising many parts of the sector are promising. The herders themselves, in their search for reference points, appear to go back to traditional systems employed before the collectivization. Many of the present rural elite derive from the elite before communism, despite the fact that one generation was virtually wiped out during the 1920s and 1930s. This development is not unlike those observed in Mongolia and western China (Potanski 1993; Longworth and Williamson 1993). The latter authors also noted that the privatisation effort can leave many herders somewhat confused and vulnerable, as previous safety nets (such as feed supply) break down without the establishment of market relations or new safety nets or disaster relief.

There have been counteracting moves by the leadership of some transformed collectives to semi-privatise, whereby the collective still holds the land, and contracts with the private herders. These contracts include binding land lease requirements as well as agreements which place the reformed collective in somewhat of a monopoly position with respect to supplying the herders and purchasing their output. It is likely that new social structures, such as cooperatives, will develop – but this will require time. As such, the coming years appear crucial in setting the stage for the livestock sector and for rural welfare in general in a society which depends traditionally on animal production.

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